

***Remarks***

Reconsideration of this Application is respectfully requested. Claims 1 – 42, 47-72 and 74 - 135 are pending in the application.

***Rejections under 35 U.S.C. § 102***

A number of claims stand rejected under 35 U.S.C. 102 based on Breed, U.S. Patent No. 6,738,697. These rejections are respectfully traversed. Claim 1 recites:

1. A system for finding a target, comprising:  
a transponder disposed on the target;  
a transceiver for monitoring the location of the target;  
a wireless communication system configured to allow communication between said transponder and said transceiver, and a processor configured to **find the target by virtual triangulation that does not use a fixed infrastructure** and based on values of position information from said transponder and said transceiver.

Breed teaches the exact opposite of what is claimed. Breed describes a vehicle position locating system on the road. Breed's system comprises a fixed infrastructure of multiple transponders (SAW and/or RFID devices) placed along the road every mile or 1/10<sup>th</sup> of a mile; and a transceiver with three antennas. The transceiver and the three antennas are mounted on the vehicle. This arrangement allows determining distance between the vehicle (three antennas) and the transponder.

Breed has no disclosure of virtual triangulation. Rather, Breed employs three antennas (positioned not on a straight line), which allow Breed to use standard/classical triangulation methods for position determination. Moreover, Breed's system is designed for an application

whereby virtual triangulation techniques cannot be deployed because these techniques require the transceiver, i.e. vehicle, to move in a pattern (see, e.g., claim 2, 3, etc.). It is nonsensical to expect a vehicle to move in a pattern that is not a straight line while on the road.

In other words, unlike present invention, the system of Breed:

1. Does employ fixed infrastructure, and
2. Does not use any of the virtual triangulation techniques described in present specification.

Further still, Breed's transceiver would require three antennas. In Breed, two antennas are positioned at opposite ends of the vehicle's front bumper and the third antenna is positioned in the middle of the rear bumper (see figure 26 of Breed). Therefore, depending upon car type, the distance between antennas could vary between roughly 1.5 and 5 meters.

Unlike Breed, in the present invention the transceiver can be a hand-held/portable device carried by a single person (operator) and, unlike in Breed's application, it is used for track-locate operations in diverse environments, for example, buildings, forests, etc. Thus, the size/weight of Breed's three antenna arrangement that is several meters wide and several meters long would severely impact and/or cripple the person's (operator) mobility, especially in buildings, forests, etc.

Even further, the position determination ambiguity depends not only on the transceiver distance measurement accuracy but, for a given distance measurement accuracy, the position ambiguity is also impacted by the separation between individual antennas and the distance between the target (transponder) and three antennas. This is because the three antennas act as position reference points that are used to determine the target location (see FIGs. 7 – 11 and

paragraphs 168 – 176 of the present specification). As a result, to keep the distance ambiguity low, the distance between antennas should be several times larger than the transceiver distance measurement error value.

In contrast with the system of Breed, in present invention the operating range may stretch to hundreds of meters. For such distances between the target (transponder) and three antennas and distance measurement error value of, for example, three meters, the distance between position reference points, e.g. antennas, should be approximately ten to fifteen meters (a larger error will require larger distances between antennas). This might be too large even for a vehicle and cannot be used by a single person (operator). It should also be noted that in the case of Breed, the operating range is limited by the SAW and/or RFID sensors' sensitivity to a maximum of 100 feet (~30 meters); and in reality these distances will be smaller (see Breed, col. 61, lines 55 – 60 and Breed col. 62, lines 20 – 25).

All virtual triangulation methods of present invention use a single antenna. The present invention system processor creates virtual position reference points by prompting operator with the transceiver to move in a pattern. The range of each movement, e.g., distances between virtual reference points, is calculated by the processor and is continuously adjusted depending upon the distance between the operator and target, and the distance measurement error values. As a result, the claimed virtual triangulation is better suited for the present invention track-locate applications than Breed's system, which was developed for a different application that is very narrow in scope.

Breed also describes a two antenna system that allows keeping vehicle on the center of a lane. However, the two antenna system does not provide enough information for determining

target location because three position reference points that are not on a straight line are needed for position determination, hence Breed has to use the standard (classical) triangulation method.

Reconsideration is respectfully requested.

***Conclusion***

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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